

## EFFECT OF WEATHER ON CROPS AND FARMING OPERATIONS, DECEMBER, 1929

By J. B. KINCER

*General summary.*—During the first decade frosts and freezing weather overspread the more southern States and did more or less harm to winter truck in the Gulf section, but a reaction to warmer about the 10th was favorable and some recovery was reported. Rains in the Florida Peninsula were beneficial in relieving the drought that had prevailed for some time, while the general snow that was deposited during the first part of the month in more northern portions disappeared from nearly all the principal winter wheat area. Toward the latter part of the decade generous rains fell in the droughty sections of the West, especially heavy falls being reported from coast districts, while rather heavy snows occurred over the northwestern Great Plains.

During the second decade mild weather throughout the central valley States, attended by considerable moisture, made fields soft and muddy and little outside work could be performed. The main winter wheat belt was generally bare of snow; in more southern sections winter truck showed rapid recovery from the effects of the previous freeze. Further rains in the far West greatly improved conditions in the northern part, but it continued dry in southern districts. During the last part of the decade there was a marked reaction to colder and outside operations were not very active.

The last decade of the month was much warmer throughout the interior of the country, which permitted more active field operations. The snow cover disappeared rapidly except over the more northern districts, while truck showed improvement in the west Gulf area. The warmer weather and absence of storms were favorable for livestock, though there was much need of snow on ranges in some sections.

*Small grains.*—Winter wheat was well protected during the severe weather of the first decade, but toward the

latter part of the period the snow cover disappeared from nearly all of the main belt; very little injury was apparent from the cold. Oats were damaged by the freeze in the Southeast, while moisture was needed in parts of the West, although the Pacific Northwest had general rains; the moisture in the latter area was beneficial, but was too late to save large acreages. Winter wheat remained in satisfactory condition during the second decade, despite the variable weather, which checked growth in places. During the last decade the ground was bare over practically the entire wheat area, but the general condition of grains remained satisfactory, except for some further damage to oats in the Southeast.

*Corn and cotton.*—The variable weather in the Corn Belt caused marked variations in gathering the remaining crop; there were some complaints of grain spoiling in fields and cribs; but molding was mostly checked by cold weather.

Gathering the remaining cotton crop was largely completed during the month, with but little unpicked at the close.

*Miscellaneous crops.*—Meadows remained in generally satisfactory condition throughout the month. The cold weather caused some suffering among livestock in the northern Great Plains, but at the close the open range permitted free grazing. The absence of water in the central Rocky Mountain region necessitated long drives of livestock, which was detrimental, but the rains in the Pacific Northwest caused good growth of grass; ranges were still poor in the far Southwest.

There was considerable damage to truck during the month, especially to cabbage and to tender varieties which were injured or killed south to southern Florida. Sugarcane in Louisiana showed some deterioration due to the warmth, following the freeze. Citrus continued to do well generally, with no extensive damage reported.

## WEATHER OF THE ATLANTIC AND PACIFIC OCEANS

551.506 (261.1)

## NORTH ATLANTIC OCEAN

By F. A. YOUNG

The weather over the steamer lanes was exceptionally severe during the first and last decades of the month, when the northern section of the ocean was swept by one storm of hurricane force after another. Both series of gales were noticeable for the extreme deepness of the lows. The observer, Mr. P. W. Nelson of the American S. S. *Westpool*, Capt. L. F. Thompson, from Bremen to Boston, reports as follows:

At 8:15 p. m. (ship's time) on December 4 the following was received from the American S. S. *Balsam*: While in 52° 07' N., 18° 41' W., wind SSE., 10, barometer 27.40 inches. Our position and barometer at same time, 50° 47' N., 16° 38' W., wind NW., 12, barometer 27.46 inches (lowest reading). Both readings corrected.

Both of these vessels are equipped with aneroid barometers, recently compared. While the corrections to be applied at such abnormally low readings may differ somewhat from those obtained at near normal pressure, the close agreement of the two instruments indicates that the error is probably not very large.

William Allingham in his "Manual of Marine Meteorology" states that the Royal Mail steamer *Tarifa* on February 5, 1870, while in 51° N., 24° W., reported a barometer reading of 27.33 inches, which was the lowest ever recorded in this region. As the reliability of the reading of the *Tarifa's* barometer is not known, these of the

*Westpool* and *Balsam* can be assumed to be not far from the record.

As shown in the table of storms a number of vessels reported readings below 28 inches in the first decade and two vessels so reported in the last. Due to the duration and severity of the first series of gales the powerful German liner *Bremen* was delayed three days on her westward voyage, arriving in New York on the 13th. Numerous press reports give an idea of the conditions during this period, and also refer to the large number of casualties, which were especially numerous along the British coast.

The low average pressure for the month in this region is shown by the unusually large negative departures at the three land stations on the British Isles, as given in Table 1, although a period of high pressure occurred from the 15th to 19th, the barometric readings at London ranging from 30.43 to 30.72 inches.

It is interesting to note that while these extreme cyclonic conditions existed over the North Atlantic, equally extreme anticyclonic conditions prevailed over the northwestern United States and Alaska, where readings of 31 inches and over were recorded at a number of stations.

Charts VIII to XIII cover the period from the 1st to 6th, inclusive, and not only give an idea of the conditions in the steamer lanes, but also show the "norther" in the Gulf of Mexico that prevailed from the 2d to 4th.

As is generally the case in an unusually stormy month, fog was comparatively rare over the steamer lanes, being

reported on not more than one day in any 5-degree square between the fifteenth and forty-fifth meridians. Fog was reported on from 2 to 3 days between the French coast and fifteenth meridian; on from 3 to 6 days over the Grand Banks; on 10 days along the American coast between New York and Hatteras, while it was unusually prevalent in the Gulf of Mexico, where it was observed on from 4 to 8 days.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure at sea level, 8 a. m. (seventy-fifth meridian). North Atlantic Ocean, December, 1929

Stations	Average pressure	Departure	Highest	Date	Lowest	Date
	<i>Inches</i>	<i>Inch</i>	<i>Inches</i>		<i>Inches</i>	
Julianehaab, Greenland.....	29.25	( <sup>1</sup> )	29.88	30th.....	28.50	1st.
Belle Isle, Newfoundland.....	29.74	<sup>2</sup> +0.04	30.34	20th.....	29.02	25th.
Halifax, Nova Scotia.....	29.99	<sup>3</sup> +0.04	30.62	13th.....	28.65	30th.
Nantucket.....	30.03	<sup>3</sup> +0.01	30.42	23d.....	29.54	31st.
Hatteras.....	30.12	<sup>3</sup> 0.00	30.44	1st.....	29.62	19th.
Key West.....	30.10	<sup>3</sup> +0.01	30.30	21st.....	29.85	18th.
New Orleans.....	30.22	<sup>3</sup> +0.07	30.48	4th.....	29.66	18th.
Cape Gracias, Nicaragua.....	29.92	<sup>2</sup> -0.06	29.98	26th.....	29.84	18th.
Turks Island.....	30.12	<sup>2</sup> +0.09	30.20	21st.....	29.92	26th.
Bermuda.....	30.21	<sup>3</sup> +0.09	30.44	13th.....	29.92	4th. <sup>4</sup>
Horta, Azores.....	30.22	<sup>2</sup> +0.11	30.66	31st.....	29.80	4th.
Lerwick, Shetland Islands.....	29.28	<sup>2</sup> -0.44	30.45	17th.....	28.26	29th.
Valencia, Ireland.....	29.52	<sup>2</sup> -0.42	30.69	16th.....	28.41	5th.
London.....	29.72	<sup>2</sup> -0.30	30.72	17th.....	28.99	5th.

<sup>1</sup> No normal available.

<sup>2</sup> From normals shown on Hydrographic Office Pilot Chart, based on observations at Greenwich mean noon, or 7 a. m., seventy-fifth meridian time.

<sup>3</sup> From normals based on 8 a. m. observations.

<sup>4</sup> And on other date or dates.

On the 7th the conditions over the steamer lanes did not differ materially from those of the 6th as shown on Chart XIII, as winds of hurricane force accompanied by hail and snow prevailed between the twentieth and fortieth meridians. On the 8th the storm area extended from the thirtieth meridian to the British coast, while by the 9th and 10th, it had contracted somewhat in extent, although heavy weather continued along the coast until the 12th. On the 13th, with the exception of a few reports of winds of force 7 from land stations on the

British Isles, moderate weather was the rule over the ocean as a whole.

On the 14th southerly winds of force 7 to 10 were reported between the fortieth parallel and Cape Sable, while over the remainder of the ocean moderate conditions prevailed and continued through the 17th.

On the 18th a low moderate in intensity and extent was central near 50° N., 33° W. This was evidently a forerunner of the series of disturbances that continued over different sections of the steamer lanes until near the end of the month, the storm area varying considerably in extent from day to day.

On the 19th a norther prevailed over the western sections of the Gulf of Mexico and the station at Vera Cruz reported at the morning observation, wind NNW., 10, barometer 30.10 inches, maximum velocity of wind 76 miles an hour.

From the 19th to 21st most of the heavy weather was confined to the eastern section of the ocean, although on the 20th a southwest wind, force 9, was reported by a vessel near Hatteras. From the 22d to 25th, however, westerly to northwesterly gales covered the major part of the steamer lanes, the storm area reaching its greatest dimension on the 25th, when it extended from the sixtieth meridian to the coast of Europe, north of the fortieth parallel. On the 26th and 27th the force of the wind as well as the area covered had diminished somewhat, the latter then extending from the thirty-fifth to fiftieth parallels and twentieth to fiftieth meridians, while on the 26th winds of force 10 were also reported between the Bermudas and Nantucket.

On the 28th and 29th the region between the thirtieth meridian and the coast of Europe was swept by southwesterly to westerly gales, the weather being especially severe on the coast on the latter day. On the 30th heavy weather continued off the coast of France and there was also a disturbance between the Bermudas and Nova Scotia, one vessel about 150 miles south of Sable Island reporting a southwesterly wind, force 12.

OCEAN GALES AND STORMS, DECEMBER, 1929

Vessel	Voyage		Position at time of lowest barometer		Gale began	Time of lowest barometer	Gale ended	Lowest barometer	Direction of wind when gale began	Direction and force of wind at time of lowest barometer	Direction of wind when gale ended	Highest force of wind and direction	Shifts of wind near time of lowest barometer
	From—	To—	Latitude	Longitude									
<b>NORTH ATLANTIC OCEAN</b>													
Kerhonkson, Am. S. S.	New York	Glasgow	55 00 N.	21 00 W.	Nov. 30.	7 p. Dec. 1.	Dec. 3.	27.83	W.....	WSW., 11.	SW.....	WSW., 11.	SSE.-S-SSW.
Winnepago, Br. S. S.	do	Avonmouth.	47 09 N.	32 50 W.	Dec. 1.	10 p., 2.	3.	28.89	NNW..	NW., 10.	NW.....	—, 10.	W-NW.
West Hobomac, Am. S. S.	New Orleans.	Glasgow	51 30 N.	8 35 W.	2.....	4 a., 2.	2.....	29.00	WSW..	SW, 11.	W.....	SW, 11.	SSW-W.
San Macedonio, Br. S. S.	Tampico	Rio de Janeiro.	22 21 N.	93 50 W.	2.....	Noon, 2.	3.....	29.95	NW.....	N., 7.	N.....	N., 9.	Steady.
Hoxie, Am. S. S.	New York	Glasgow	45 35 N.	40 00 W.	2.....	6 p.....	3.....	28.64	NNW..	SW., 11.	NW.....	SW., 12.	WSW-W-NW.
Manchester Spinner, Br. S. S.	Halifax	Liverpool	51 14 N.	25 16 W.	4.....	Noon, 4.	5.....	( <sup>1</sup> )	SSW..	WSW., 11.	WNW..	WSW., 11.	WSW-W-NW.
Westpool, Am. S. S.	Bremen	Boston	51 30 N.	16 01 W.	4.....	—, 4.	11.....	27.46	SSE..	WNW., 12.	SW.....	—, 12.	NW-SW.
Rellance, Ger. S. S.	Hamburg	New York	49 54 N.	29 30 W.	4.....	8 a., 4.	7.....	27.81	NW.....	WSW., 11.	W.....	—, 12.	WSW-NW.
West Eldara, Am. S. S.	New York	Antwerp	48 58 N.	25 44 W.	1.....	9 a., 4.	5.....	27.85	WNW..	W., 12.	WNW..	—, 12.	—
Baltic, Br. S. S.	Liverpool	New York	49 37 N.	28 24 W.	7.....	8 a., 4.	7.....	27.74	NW.....	NW., —	NNW..	—, 12.	SW-NW.
Middleham Castle, Br. S. S.	Galveston	Havre	47 15 N.	14 52 W.	4.....	4 a., 5.	5.....	28.88	SSW..	SSW., 8.	SW.....	SSW., 10.	SSW-SW.
France, Fr. S. S.	Havre	New York	49 50 N.	15 16 W.	6.....	Noon, 6.	7.....	28.21	WNW..	WNW., 12.	WSW..	WNW., 12.	—
Henri Jasper, Belg. S. S.	New York	Antwerp	49 10 N.	31 00 W.	6.....	Noon, 7.	8.....	29.19	NNW..	WNW., 12.	WNW..	WNW., 12.	steady.
Moerdijk, Du. S. S.	London	Curacao	49 16 N.	4 55 W.	8.....	—, 8.	10.....	29.31	SW.....	—, 9.	NW.....	—, 11.	—
West Gambo, Am. S. S.	Bremen	New Orleans.	49 00 N.	8 30 W.	10.....	9 a., 10.	13.....	29.63	SW.....	SW., 7.	WNW..	W., 12.	—
Grete, Ger. S. S.	Hamburg	Tampa	46 00 N.	16 00 W.	20.....	1 p., 21.	24.....	29.17	SW.....	WNW., 10.	WNW..	WNW., 11.	—
Natira, Am. S. S.	Boston	Hamburg	43 48 N.	45 00 W.	22.....	11 a., 22.	25.....	29.15	NW.....	—, 8.	NW.....	—, 9.	—
Schoharie, Am. S. S.	Savannah	Liverpool	46 03 N.	40 13 W.	23.....	—, 23.	24.....	29.18	NW.....	NW., 10.	NW.....	—, 10.	Steady.
River Delaware, Br. S. S.	New York	Gibraltar	39 48 N.	54 50 W.	24.....	3 p., 24.	25.....	29.64	S.....	SW., 7.	NW.....	SW., 10.	S-SW-NW.
Topa Topa, Am. S. S.	Wilmington, N. C.	Liverpool	51 00 N.	17 00 W.	21.....	—, 24.	25.....	27.69	W.....	NW., —	NW.....	—, 11.	E-SE-NW.
Hoxie, Am. S. S.	Avonmouth.	Baltimore	46 20 N.	20 35 W.	20.....	7 a., 24.	29.....	28.66	WSW..	WNW., 10.	N.....	WNW., 12.	S-WNW-NW.
Boston City, Br. S. S.	Fowey	Boston	49 48 N.	19 15 W.	24.....	11 a., 24.	25.....	28.03	SE.....	NW., 12.	NW.....	NW., 12.	SE-S-NW.
Jobshaven, Du. S. S.	Rotterdam	New York	41 13 N.	49 20 W.	22.....	9 a., 25.	25.....	29.59	NW.....	SW., 11.	SW.....	SW., 11.	SW-W.
West Tacomoc, Am. S. S.	Houston	Havre	37 48 N.	65 59 W.	26.....	—, 26.	26.....	29.48	ESE..	ESE., 3.	NW.....	—, 10.	ESE-NNE.
Florida, Dan. S. S.	Newcastle	Portland, Me.	52 00 N.	36 20 W.	24.....	2 a., 26.	26.....	27.92	N.....	NW., 11.	NNW..	NW., 11.	SW-NW.

<sup>1</sup> Observer states that at 10.17 a. m., Dec. 4, barometer was below lowest graduation, the hand resting against the thermometer attached to dial. At 1 p. m., Dec. 6, the barometer read 28 inches.

Tropical Storms of the Western North Atlantic, 1926-1929, Inclusive  
(Taken largely from the Pilot Charts and limited to those of known hurricane intensity over some portion of path)  
(Plotted by W. P. Day)

